petrosus superficialis minor to the ganglion oticum and so to the lingualis, while the smaller part of the fibers passes from the tympanic plexus by a communicating branch to the geniculate ganglion of the facial, along this nerve to the chorda tympani and by the chorda to the lingualis. In Bruns' case the right temporal bone is probably fractured and the tympanic plexus can very well have been injured by this, thus well explaining part of the facts. The puzzling feature of the case is that the ageusia occurs on the back of the tongue as well, which is generally considered to be innervated directly by glosso-pharyngeal fibers and that there is no other evidence of glosso-pharyngeal injury. Bruns makes the suggestion that if the nervus intermedius is considered with Lussana and Vulpian to contain the nerves of taste for the back of the tongue, in addition to those for the other gustatory regions, as maintained by the above authors, this case may perhaps be explained, but he urges no hypothesis and presents these observations more as a contribution to the discussion than as decisive on any points.

Sur le nombre et le calibre du fibres nerveuses du nerf oculomoteur commun, chez le chat nouveau-né et chez le chat adulte. M. H. SCHILLER. Comptes Rendus. 30 September, 1889.

Under the direction of Forel, Schiller has made some interesting observations to test whether the nervous elements increased in number after birth. The test was made by counting with care the number of fibers in the cross-sections of the oculo-motor nerves of some new-born cats and comparing this number with that found in the cross-sections of the same nerve in the adult animal.

The average number of fibers, taken from 3 cats, new-born, gives,	2942
For 2 cats, 4 weeks old, (same litter,)	2961
For 1 cat, 6 weeks old,	3032
For 1 cat, 1 year old,	3046
For 1 cat, a year and a half old,	3035

The slight increase in the number of fibers for the older animals is fairly accounted for by the greater ease of counting the elements in the adult, for the diameter of the fibers in the new born lies between 1.5—2 μ., while in the case of the oldest specimen—a year and a half old—it varies from 6—20 μ. The conclusion, as pointed out in a note by Forel, is to show plainly that cell multiplication in this nerve centre has stopped at the time of birth. The work is to be continued with the view to finding whether, as the present views demand, each nerve fiber is represented by a nerve cell.

Ueber die Histologie des Centralnervensystems. FROMMANN. Jahressitzung des Vereins der deutschen Irrenärzte. Jena, Juni, 1889. Abstracts of communications in Neurolog. Centralbl., No. 13, 1889, by Bruns.

First concerning the structure of the axis cylinder in nerve fibers. There are three views: Kupffer assumes continuous fibrillae running the entire length of the fiber; Joseph, a network with fibrillae passing between the meshes; Heitzmann, cross anastomoses which interrupt the direct tracts in the axis cylinder. From the study of invertebrates, Leydig supports the last view and explains the cross anastomoses as a supporting structure, which being interrupted cannot conduct. The conductive substance is the hyaloplasma, enclosed by this supporting substance. If this is true, how explain the conducting in the fine terminal branches of nerves where there is no hyaloplasma? Leydig describes in nerve cells, pale stripes and lines of hyaloplasma which conduct the nervous impulse from the cells. Frommann could not find these. He

described then in detail the form and fibers of the nuclear framework of the ganglion cell. For the most part these form a network and pass out of the cell as fine fibers. The arrangement is particularly plain in the *ganglion stellatum* of the cuttle fish. These fine fibers unite, in this case, the cell with its capsule and the cells with one another. Against Leydig's view that the life processes are associated with the hyaloplasma is the fact that during life the fibers and their nodal points continually change their form. That such changes represent a normal process is probable.

Nouvelles recherches sur la constitution cellulaire de la fibre nerveuse. L. GEDOELST. La Cellule. T. V., 1er Fasc., 1889. 1 plate.

The discussion in this paper is centred on the reticular portion of the medullary sheath. Gedoelst has previously published on this topic, and has convinced himself on the following points: First, there exists a reticulum which has been described successively by Ewald and Kühne, and by Lautermann. Second, the neurokeratine network of the former is identical with the network of the latter. Third, this network is preformed and not merely a result of the reagents used. Fourth, the threads of the network are impregnated with lecithine, while cerebrine occupies the meshes. The present paper deals first with the clefts of Lautermann. These are not preformed in the sense that they are plainly visible in the normal nerve, but are preformed in the sense that at the points where they appear there are distinct peculiarities of structure in the sheath. These peculiarities point to the existence of a substance which swells with ease, thus separating the myeline into segments and exposing at one stage the threads of the network. As a rule the swelling goes so far that these threads are broken. The surface of the cones thus formed with the encircling ridges Gedoelst identifies with the "spiral fiber" of Golgi and Rezzonico, which he looks upon as an artefact. His second point is the relation of the parts at the nodes. The axis cylinder is continuous, as is also the sheath of Schwann. So far as the latter is concerned the fiber may be considered to have a structure analogous to that of a filamentous alga for example, in which the outer cell wall is continuous despite the fact that from it arise the cross-partitions which divide the filament into segments. This cross-partition in the case of the axis cylinder is a delicate membrane constructed like a cribriform plate through the holes of which the fibrillae pass. Only the most delicate manipulation serves to preserve this plate, and all the other relations of the parts at the node are but deformations of this structure. A good bibliography of the recent works goes with the paper.

Weiterer Beitrag zur Kenntniss der Golgi'schen Untersuchungsmethode des centralen Nervensystems. Dr. L. GREPPIN. Arch. f. Anat. u. Entwickelungsgsch.—Supplement-Band, Nov., 1889. 1 Taf.

The material employed was mainly the human cerebrum and cerebellum. To the silver method of Golgi, Greppin has added a technical point which cannot fail to be useful. The silver stained section is floated in a 10 per cent. solution of hydrobromic acid. By this treatment the silver deposit turns white by reflected light, while by transmitted light it still appears black. The pictures thus obtained are as sharp as with the silver alone, and the preparations, besides being permanent can be mounted under a cover glass, and further can be treated subsequently by a number of methods. So far as staining is concerned, the author finds a final treatment by Pal's modification of Weigert's haematoxylin method by far the most instructive. It is also found that, after the section has been treated with a 10 per cent. solution of hydrobromic acid, if it then be put in a 40 per cent. solution of the same, the